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(54) Title: RACEMOSELECTIVE PREPARATION OF BRIDGED METALLOCENE COMPLEXES HAVING UNSUBSTITUTED OR 2-SUBSTITUTED INDENYL LIGANDS

(57) Abstract: The invention relates to a process for preparing racemic metallocene complexes by reacting transition metal complexes with cyclopentadienyl derivatives of alkali metals or alkaline earth metals and heating the reaction mixture obtained in this way to a temperature in the range from -78 to 250 °C, to the corresponding metallocene complexes themselves and to their use as catalysts or as constituents of catalysts for the polymerization of olefinically unsaturated compounds or as reagents or catalysts in stereoselective synthesis.

PATENT COOPERATION TREATY

PCT

PCT/I/2005 25 APR 2005

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference LU6059/CB	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/11678	International filing date (day/month/year) 22/10/2003	(Earliest) Priority Date (day/month/year) 25/10/2002
Applicant BASELL POLYOLEFINE GMBH		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. Certain claims were found unsearchable (See Box I).

3. Unity of invention is lacking (see Box II).

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/11678

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C08F4/60 C08F4/64 C07F17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C08F C07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

CHEM ABS Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	EP 1 275 662 A (SUMITOMO CHEMICAL CO) 15 January 2003 (2003-01-15) see whole document and especially the definition for substituents X paragraphs '0193!, '0195!	1-16
X	& WO 02/051878 A (SUMITOMO CHEM CO LTD) 4 July 2002 (2002-07-04) ---	1-16
X	EP 0 997 480 A (MARUZEN PETROCHEM CO LTD) 3 May 2000 (2000-05-03) paragraphs '0011!, '0019!, '0028! ---	1-16
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- *&* document member of the same patent family

Date of the actual completion of the international search

22 April 2004

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04/05/2004

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/11678

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WARTCHOW, RUDOLF ET AL: "Synthesis and characterization of rac-ethylene-1,2-bis(.eta.5-4,5,6,7-tetrahydro-1-indenyl)zirconium bisamides (EBTHI)Zr(NHR)2"</p> <p>JOURNAL OF ORGANOMETALLIC CHEMISTRY (1998), 566(1-2), 287-291 ,</p> <p>XP004139820</p> <p>ISSN: 0022-328X</p> <p>compound 3a</p> <p>---</p>	3-5,7,9, 16
A	<p>WO 02/00672 A (BASELL POLYOLEFINE GMBH)</p> <p>3 January 2002 (2002-01-03)</p> <p>the whole document</p> <p>---</p>	1-16
A	<p>BOCHMANN, MANFRED ET AL: "Base-free cationic zirconium benzyl complexes as highly active polymerization catalysts"</p> <p>ORGANOMETALLICS (1993), 12(3), 633-40 ,</p> <p>XP001165622</p> <p>ISSN: 0276-7333</p> <p>the whole document</p> <p>-----</p>	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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